



# Potato late blight in Lithuania

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Potato late blight caused by *Phytophthora infestans* is one of the most destructive potato diseases worldwide. This disease causes serious losses in Lithuania, too (Valskytė et al., 2003).

In Fig. 1 it is shown that late blight is firstly detected by the specialists of the State Plant Protection Service (SPPS) (Plant protection ..., 1998-2006). The specialists are looking for the first disease outbreak throughout the country, and the first disease symptoms are usually determined in small scale gardens. Such places are usually one of the primary disease focuses. The data on the first late blight outbreak in Elmininkai (research station of the Lithuanian Institute of Agriculture) and Dotnuva (the Lithuanian Institute of Agriculture) were collected from potato field trials. The distance between these two sites is about 100 km.

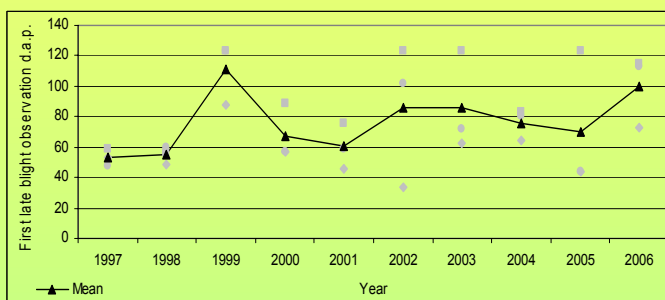


Fig. 1. First late blight observation in days after potato planting (1 May) in small scale gardens (●), Elmininkai (▲) and Dotnuva (◐).

The first late blight onset was usually recorded by the specialists of SPPS in small scale gardens. The disease in Elmininkai research station was detected earlier than in Dotnuva. In 1997 and 1998, late blight was spotted very early in three different places within two weeks. This is due to the heavy rain which occurred in the first months of potato growing season. In June of 1997 rainfall amounted to 149.5 percent from the mean value and in May of 1998 to 150.2 percent in Dotnuva site. Also, the year 1998 was very favourable for the disease outbreak because the amount of rainfall in July amounted to about 275 percent from the mean value.

Scientist Hannukkala (2007) determined that the outbreaks of the epidemics begin 2 – 4 weeks earlier in Finland. According to the data presented in Fig. 1, the disease outbreak in Lithuania did not occurs earlier. Presumably because of reduced area devoted to potato production (Fig. 2).

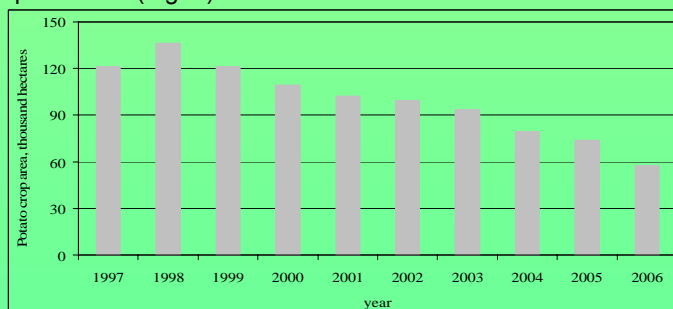


Fig. 2. Potato crop area (thousand hectares) in 1997 – 2006.

By the year 2006, the area under potato production had dwindled by half, compared with that in 1997 (www.stat.gov.lt). On the other hand, more potato is grown on intensively-managed farms where growers use plant protection and other measures in order to prevent pest damage. Also in 8 years out of 10 the amount of rainfall was below the long-term average (Fig.3)

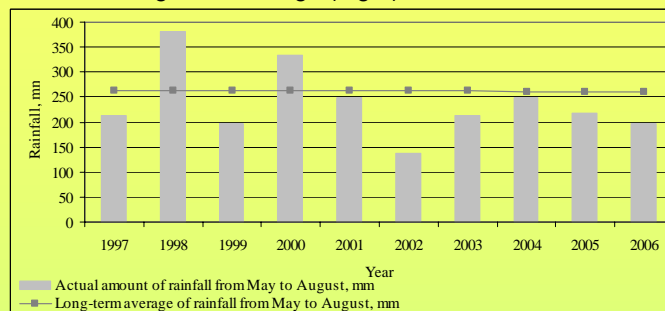


Fig.3. Actual and long-term average of rainfall from May to August in central part of Lithuania (Dotnuva) over 1997 – 2006.

Source: Dotnuva weather station

Foreign researchers suggest that yield losses to late blight can be as high as up to 50 percent (Fry et al., 1983). According to the results obtained in Lithuania, yield losses to late blight amount to 20 – 30 percent, but under favourable weather conditions the losses can be higher (Ronis and Tamošiūnas, 2003).

In non irrigated plots potato growing is under risk. Dry years are not favourable for the late blight, but other disease – early blight (*Alternaria solani*) and lack of moisture in the soil could be detrimental to potato crops.

Late blight is a disease triggered primarily by the weather conditions. In some cases the disease appears early in the season, but causes relatively small damage to the crop and vice versa. For instance in 2006, the first symptoms of late blight were detected on 23 August in Dotnuva. After 10 days potato foliage was completely destroyed. Yield losses to the disease constituted about 75 percent for the cultivar Fasan (unpublished data).

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